

## Psychological impact of COVID-19 in a refugee camp in Iraq

doi:10.1111/pcn.13142

The worldwide spread of COVID-19 is especially causing a humanitarian catastrophe in refugee camps in crisis regions.<sup>1</sup> For example, currently over 350 000 survivors of Islamic State of Iraq and Syria (ISIS) terrorism in the Kurdistan region of Iraq live in more than 20 refugee camps. These communities, which had already been traumatized, are now confronted with further adversities that exacerbate the ongoing psychological suffering and lead to increased suicide rates<sup>2</sup>; however, medical and psychological care is limited,<sup>3</sup> and the work of humanitarian actors is restricted.<sup>4</sup> Moreover, social distancing is almost impossible in high-density camps, and hygiene practices are often simply not applicable.<sup>5</sup> The objective of our pilot study was to briefly examine for the very first time the development of mental health of a cohort of Yazidis in a refugee camp in Iraq using selective psychometric measures before and shortly after the COVID-19 outbreak.

The participants were aged between 18 and 58 years ( $N = 68$ ; mean age = 45.72 years,  $SD = 3.52$  years; 38 females). They had fled from ISIS in 2014 and have since been living in a refugee camp near the city of Duhok, Iraq. This cohort was interviewed in October 2019 prior to the COVID-19 pandemic and, having adapted the study to challenging circumstances, again in April 2020 during the spread of COVID-19 through demographic questionnaires, the revised Impact of Event Scale (IES-R),<sup>6</sup> and the Composite International Diagnostic Interview (CIDI).<sup>7</sup> Descriptive data are illustrated as the mean values of the standard deviation, and categorical parameters are presented as percentages. The presented comparison of both investigated groups was calculated with  $\chi^2$ -tests,  $t$ -tests, and a univariate two-factor analysis of variance. Questionnaires in

Kurdish were read by native Kurdish interviewers who had been trained by the research team at the Institute for Psychotherapy and Psycho-traumatology at the University of Duhok under the leadership of the first author of this correspondence. The investigation was approved by the University Review Board of the University of Duhok; all subjects gave informed consent.

The refugees had not been taken captive but had friends or family members who had been murdered. They lived in small tents together with 8–12 other people and their educational level ranged from 0 to 12 years of school attendance (mean = 6.8 years,  $SD = 2.61$  years). Approximately 88% of the respondents were victims of a terror attack, 34% had witnessed a person being beaten or tortured, and 69% had lost at least one sibling. The mean initial IES-R total score for females was 9.2/15 ( $SD = 2.6$ ,  $Mdn = 11$ , range = 10–15) and that for males was 6.2/15 ( $SD = 2.4$ ,  $Mdn = 10$ , range = 10–15). Yazidi who had individually experienced rape or torture were excluded from this investigation because they evidenced markedly high post-traumatic stress disorder (PTSD) rates and comorbidities even before the COVID-19 pandemic.<sup>8</sup> The different psychometric prevalence rates of mental disorders in October 2019 and April 2020 according to CIDI were calculated and then sex-matched compared (Table 1).

The prevalence of PTSD increased to ~58% (95% confidence interval [CI] = 34.1%–62.5%) in females and ~47% (95% CI = 28.5%–52.4%) in males (Table 1); its rate was significantly higher among women than among men (~43% vs ~58%),  $\chi^2(1, N = 68) = 9.2, P < 0.01$ . In 2019, the women had reported an average of 9.04 ( $SD = 2.82$ ) of the 17 DSM-IV PTSD symptoms compared to an average of 4.76 ( $SD = 2.04$ ) symptoms for the men,  $F(1, 137) = 7.8, P < 0.01$ . In 2020, women reported an average of 12.01 ( $SD = 3.12$ ) of the DSM-IV symptoms compared to 6.46 ( $SD = 2.16$ ) symptoms reported by men,  $F(1, 327) = 9.1, P < 0.01$ .

The results of the IES-R for men and women together show a significant effect in the PTSD subdomains comprising 'reexperiencing the event,' 'avoidance and numbness of feelings,' 'hyperarousal,' and 'repercussions of the preceding symptoms on activities of daily living.' The reexperiencing values (IES-R; range = 0–35) result in a mean of 32.4 ( $SD = 4.68$ ); on the Avoidance subscale (range 0–40), a mean value of

**Table 1.** Sex-matched (male vs female) prevalence rates of mental disorders in October 2019 (before COVID-19) and April 2020 (during COVID-19) according to the Composite International Diagnostic Interview

Mental disorder	2019 (before COVID-19)		2020 (during COVID-19)	
	Male (%) $n = 30$	Female (%) $n = 38$	Male (%) $n = 30$	Female (%) $n = 38$
Depression	36.7 (11)	42.1 (16)	43.3 (13)	47.4 (18)
Anxiety	46.7 (14)	52.6 (20)	56.7 (16)	63.2 (24)
Somatoform	33.3 (10)	42.1 (16)	36.7 (11)	44.7 (17)
Dissociation	0 (0)	26.3 (10)	0 (0)	31.6 (12)
Post-traumatic stress disorder	36.7 (11)	47.4 (18)	43.3 (13)	57.9 (22)
Reexperiencing the event	36.7 (11)	47.4 (18)	43.3 (13)	57.9 (22)
Avoidance of reminders of the event and numbness of feelings	36.7 (11)	42.1 (16)	43.3 (13)	63.2 (24)
Hyperarousal	36.7 (11)	47.4 (18)	43.3 (13)	57.9 (22)
Repercussions of the preceding symptoms on activities of daily living	36.7 (11)	42.1 (16)	43.3 (13)	44.7 (17)
Suicidal ideas	26.7 (8)	42.1 (16)	30.0 (9)	47.4 (17)

36.5 (SD = 4.81) is achieved; and on the Hyperarousal subscale (range = 0–35), a mean value of 30.1 (SD = 5.14) is achieved. The documented differences are highly statistically significant ( $P < 0.001$ ) and can be described as ‘severe’ in all patients.

During the COVID-19 pandemic, the probability of PTSD and other mental disorders in refugees, especially women, increased in comparison with the already difficult situation before the crisis.

The complete isolation and the impossibility of leaving the refugee camp probably reactivated the traumatic experience with a feeling of helplessness, similar to that during captivity or flight.

Altogether, our analyses in a refugee camp provide additional evidence that being unable to obtain any medical support, the experience of repeated helplessness, and the loss of control seem to play an impressive role among those who still report suffering from traumatization and other mental disorders 5 years after experiencing genocide.

The limitations of the current study in refugees living in camps – the first of its kind during the COVID-19 pandemic – include the use of a cross-sectional cohort and in the first instance a relatively small sample size with a limited set of psychometric instruments.

Future studies are required to investigate the impact of the current pandemic on refugees with existing psychological problems. The development of adapted mental treatment approaches for refugees during future pandemics seems wise and urgently necessary.

### Acknowledgment

Open access funding enabled and organized by Projekt DEAL. Open access funding enabled and organized by Projekt DEAL.

### Disclosure statement

The authors declare no conflicts of interest.

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Received 21 June 2020; revised 18 August 2020; accepted 31 August 2020.

# Impact of COVID-19 on obsessive–compulsive disorder patients

doi:10.1111/pcn.13152

The COVID-19 pandemic has led to a significant elevation of psychological distress in the general population, with reports of moderate to severe increases in anxiety, depression, and stress.<sup>1</sup> Obsessive–compulsive disorder (OCD) patients might be especially vulnerable to increased psychological distress,<sup>2–4</sup> as many aspects of the COVID-19 crisis focus on uncertainty and cleanliness, which are core symptoms of many OCD patients.<sup>3</sup> Alternatively, individuals with OCD tend to direct their attention toward their inner mental thoughts<sup>5</sup> and thus might be less affected by external events. Similarly, OCD symptoms tend to be specific and subjective<sup>5</sup> and thus the existence of a new virus would not necessarily increase the fear of contamination. Furthermore, quarantine may instead lead to patients feeling more protected from harm or that their concerns surrounding cleanliness or preventing harm are ‘justified,’ which might consequently provide them with some relief. Therefore, we assessed OCD symptom change in response to COVID-19 during the period of quarantine in Israel.

Sixty-five participants who reported being diagnosed with OCD by a licensed psychiatrist completed an online survey consisting of the Depression Anxiety Stress Scale – 21 (DASS-21)<sup>6</sup> and questions regarding their OCD. This study was approved by the Ethics Committee of the Faculty of Social Sciences of the Hebrew University of Jerusalem and was completed between 29 March and 20 April 2020, during a period of mandated quarantine in Israel, which began on 17 March and ended on 19 April. The period of mandated quarantine was accompanied by strict guidelines allowing individuals to leave their residence only for buying food, medical treatment, and essential work. Participants indicated whether they experienced symptoms relating to five common categories of OCD symptoms: contamination, moral concern, harm avoidance, concerns about symmetry and exactness, and checking.<sup>7, 8</sup> For each endorsed category, participants reported the duration of their OCD, rated the severity of their symptoms, and indicated the degree of change in their symptoms in the past 2 weeks (on a scale from 1 [*Significantly worsened*] to 5 [*Significantly improved*]).

Results indicated that participants were evenly distributed in reporting improvement ( $n = 21$ ), worsening ( $n = 21$ ), or no change ( $n = 23$ ) in symptom severity. Of those reporting change, over 70% reported mild change (16 improved, 14 worsened) and less than 30% reported a significant change (5 improved, 7 worsened). There were no differences in symptom severity nor in symptom categories among the people reporting improved, worsened, or no change in symptom severity over the past 2 weeks (Fig. 1). Univariate analyses of variance indicated that compared to participants reporting improvement or no change in symptom severity, participants reporting worsening of symptoms in the past 2 weeks reported higher anxiety (DASS-21-A),  $F(2, 62) = 115.52$ ,  $P < 0.001$ ,  $\eta_p^2 = 0.79$ , and stress (DASS-21-S),  $F(2, 62) = 34.49$ ,  $P < 0.001$ ,  $\eta_p^2 = 0.53$ , but not depression (DASS-21-D),  $F(2, 62) = 0.21$ ,  $P = 0.81$ . There were no differences across participants who reported improved, worsened, or no change in symptom severity in age, proportion of men and women, mean symptom severity, mean onset of earliest symptom, medication status, or psychotherapy status (Fig. 1). A binary logistic regression analysis was carried out to predict reports of (at least one) symptom worsening over the past 2 weeks. Type of symptom, current symptom severity, medication status, psychotherapy status, symptom onset, sex, age, and DASS subscales were entered as predictors. Results indicated that only the DASS-21-A and the DASS-21-S were significant predictors ( $\beta_{\text{DASS-A}} = 34.164$ ,  $P < 0.001$ ;  $\beta_{\text{DASS-S}} = 21.338$ ,  $P < 0.001$ ). Similar results were obtained for a binary logistic regression analysis to